

CASE NO.: HSI920030207US1

Serial No.: 10/670,948

September 28, 2005

Page 2

PATENT

Filed: September 25, 2003

1. (currently amended) A hard disk drive, comprising:
at least one rotatable disk;
at least one slider juxtaposed with the disk;
a suspension holding the slider; and
a roll static attitude (RSA) bias mechanism coupled to the suspension to establish a RSA of the slider;

a HDD controller executing a program to actuate the RSA bias mechanism to establish a zero RSA during read and write operations and to otherwise establish a non-zero RSA during ramp load and unload operations.

2. The disk drive of Claim 1, wherein the RSA bias mechanism includes at least one piezoelectric structure bonded to the suspension.

3-5. (canceled).

6. (currently amended) The disk drive of Claim 1, wherein the RSA is implemented by actuating the RSA bias mechanism to bend a flexure of the suspension to cause an inner edge of the slider to be higher relative to the disk than an outer edge of the slider during load and unload operations.

7. (currently amended) A hard disk drive (HDD) comprising:
at least one slider;

11:19-16 AMZ

CASE NO.: HSI920030207US1

Serial No.: 10/670,948

September 28, 2005

Page 3

PATENT

Filed: September 25, 2003

at least one roll static attitude (RSA) bias mechanism coupled to the slider to turn the slider;

and

at least one controller actuating the RSA bias mechanism to establish a zero RSA based on making a determination whether the slider is being loaded/unloaded or is in data communication with the disk, during a first condition and a non-zero RSA during a second condition.

8. (canceled).

9. (currently amended) The HDD of Claim 7, wherein the a non-zero RSA is implemented by actuating the RSA bias mechanism to bend a flexure associated with the slider to cause an inner edge of the slider to be higher relative to a data storage surface than an outer edge of the slider when it is determined that the slider is being loaded/unloaded.

10. (original) The disk drive of Claim 7, wherein the RSA bias mechanism includes at least one piezoelectric structure bonded to a suspension associated with the slider.

11. (currently amended) A data storage device, comprising:

data storage means for storing data;

data transfer means juxtaposed with the data storage means for communicating data therebetween;

roll static attitude (RSA) biasing means for establishing a RSA of the data transfer means; and

11/09-16.AM2

CASE NO.: HSJ920030207US1
Serial No.: 10/670,948
September 28, 2005
Page 4

PATENT
Filed: September 25, 2003

logic means for actuating the RSA biasing means to establish a ~~non-zero~~ RSA of the data transfer means depending on whether or not the data transfer means is being loaded/unloaded, the logic means being programmed to establish a non-zero RSA wherein an inner edge of the data transfer means is higher relative to the data storage means than is an outer edge of the data transfer means during load/unload, the logic means being programmed to establish a zero RSA of the data transfer means when the data transfer means is communicating with the data storage means, at least during a first condition.

12, 13 (canceled).

14. (original) The data storage device of Claim 11, wherein the RSA biasing means is established at least in part by a piezoelectric element.

11/29/16 AMZ